Excessive Daytime Sleepiness in Thai Aviation Personnel

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Excessive Daytime Sleepiness in Thai Aviation Personnel

INTRODUCTION AND STUDY OBJECTIVES:

METHODS

RESULTS

CONCLUSION AND DISCUSSION
Excessive Daytime Sleepiness (EDS)

- The tendency to fall asleep during normal waking hours.

*Public health problem,
*Accidents in transport operations.

*Human errors ➔ jeopardize flight safety

* High prevalence 10%-25%.

* Mental or physical performance.
* A risk of cardiovascular morbidity and mortality.
Objectives

The prevalence of EDS in Thai aviation personnel

The factors that are associated with EDS in Thai aviation personnel.
Methods

✓ A CROSS-SECTIONAL SURVEY OF THE PERSONNEL FROM THAI AVIATION COMMUNITY WAS PHYSICAL CHECKED-UP AT THE INSTITUTE OF AVIATION MEDICINE DURING MARCH 2018 TO JULY 2018.

✓ 319 VALID RESPONSES

✓ THE DATA WAS COLLECTED BY SELF-ADMINISTERING THE QUESTIONNAIRE BY SCAN QR CODE.
STUDY POPULATION CHARACTERISTICS.

Age
- Range: 20-58 yrs
- Mean age: 31.8 yrs

BMI
- Range: 18.5-32kg/m²
- Mean BMI: 22.45 kg/m²

319 valid responses
- Male: 183 (43%)
- Female: 136 (57%)

Professional category (%)
- ATC: 1.9%
- Pilot: 30.7%
- Cabin Crew: 42.6%
- Others: 24.8%
Study population characteristics

Professional category (%)

- ATC: 25%
- Cabin crew: 31%
- Pilot: 42%
- Other: 2%

Gender (%)

- Male: 57%
- Female: 43%
✓ Study population characteristics

BMI < 18.5: underweight
BMI 18.5 - 22.9: normal
BMI 23 - 24.9: overweight
BMI 25 - 29.9: obesity I
BMI > 30: obesity II
QUESTIONNAIRE

- EDS--- THE EPWORTH SLEEPINESS SCALE (ESS).

- EDS:--ESS ≥11
  SPECIFICITY=46.9%
  SENSITIVITY=69.2%

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Excessive Daytime Sleepiness in Thai Aviation Personnel

Epworth Sleepiness Scale

How likely are you to doze off or fall asleep in the following situations?
Use the following scale to choose the most appropriate number:

<table>
<thead>
<tr>
<th></th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sitting and reading</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Watching television</td>
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<tr>
<td>Sitting inactive, in a public space</td>
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<td>Lying down to rest in the afternoon when circumstances permit</td>
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<td>Sitting and talking to someone</td>
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<td>Sitting quietly after a lunch without alcohol</td>
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<tr>
<td>As a passenger in car for an hour without a break</td>
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<tr>
<td>In a car, while stopped for a few minutes in traffic</td>
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</table>

Total Score:
INTERPRETATION OF EPWORTH SLEEPINESS SCORES

**Normal**

0-5  Lower Normal Daytime Sleepiness
6-10  Higher Normal Daytime Sleepiness

**Mild-moderate**

11-12  Mild Excessive Daytime Sleepiness
13-15  Moderate Excessive Daytime Sleepiness

**Severe**

16-24  Severe Excessive Daytime Sleepiness

Johns and Hocking, 1997; Sanford et al, 2006
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Prevalence: 23%

Mean BMI is 22.45 (SD=3.40)
Mean ESS is 8.12 (SD=3.77)

ESS score is associated with BMI.
Prevalence of EDS

- Normal: 77%
- EDS: 23%

11-12: Mild EDS
13-15: Mod EDS
16-24: Severe EDS

77%
Prevalence of EDS and gender

- Male: 25.68% Normal, 19.12% EDS
- Female: 19.12% Normal, 19.12% EDS
Prevalence of EDS and Age

- Normal
- EDS
Prevalence of EDS and BMI

- Normal%
- Prevalence of EDS%

- 17.65% in <18.5: underweight
- 22.07% in 18.5-22.9: normal
- 23.75% in 23-24.9: overweight
- 24.24% in 25-29.9: obesity I
- 50% in >30: obesity II
Prevalence of EDS(%) / BMI

- <18.5: underweight
- 18.5-22.9: normal
- 23-24.9: overweight
- 25-29.9: obesity I
- >30: obesity II

Prevalence:
- 17.65%
- 22.07%
- 23.75%
- 24.24%
- 50%
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CONCLUSION

The high prevalence of EDS (23%) in Thai Aviation personnel.

ESS is associated with BMI.

Weak relationship between Age and ESS.

No relationship between Gender and EDS.
DISCUSSION

High prevalence of EDS (23%)

- Risk for health and safety.

The Epworth sleeping scale (ESS) as a screening tool for EDS

- Be employed to aviation personnel for early detect EDS to promote health and safety in aviation community.

- EDS ≥11
  => Polysomnography (PSG)
  => The underlying causes.
Focus on the causes of EDS.

Evaluate and treat ESD like any other symptom.

Establishing good sleep hygiene.